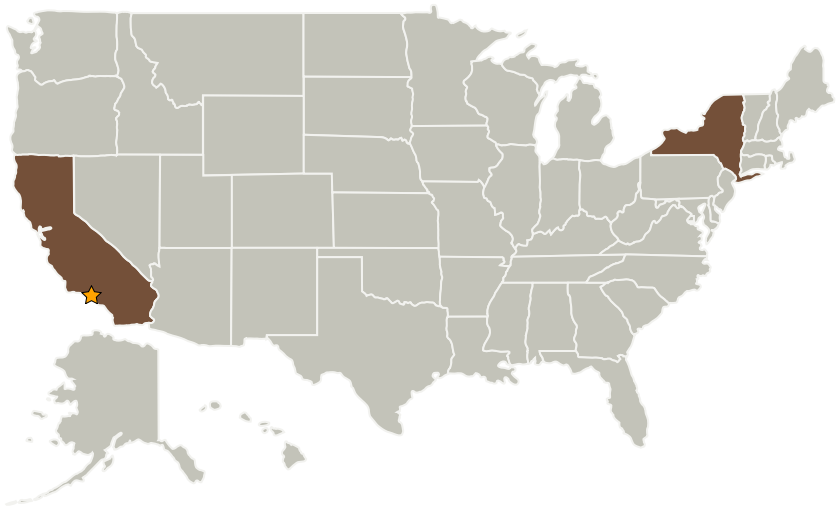
Enabling Technologies for Fabrication of Large Area Flexible Antennas, Phase I

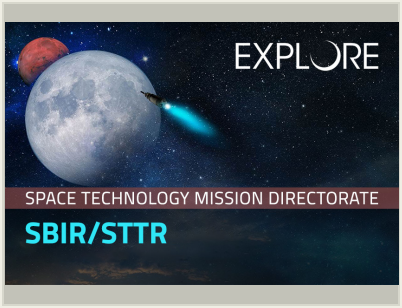
Completed Technology Project (2006 - 2006)

Project Introduction

MesoScribe Technologies, a high tech start-up from SUNY-Stony Brook, proposes to apply a breakthrough new direct writing technology to meet the objectives set-forth in the NASA SBIR topic S2.06 Advanced Flexible Electronics. This technology is based on revolutionary advances to modern day thermal spray materials processing enables deposition of wide range of electronic materials onto large areas at low processing temperatures and, for most part, requires no post-processing. MesoScribe will develop large area patterning capability to demonstrate electronically steerable L-band, phased array antennas to meet NASA's goals. During phase I the maximum dimensions for considerations will be ? x ? m. This is based on the capabilities of our current motion system and not a limitation of the process itself. The antennas will be designed, modeled, fabricated and characterized for performance attributes. The flexibility of the system will also be assessed through appropriate bending experiments. In parallel, conceptual strategies for large area fabrication will also discussed for future consideration. Finally, MesoScribe will also demonstrate our unique ability in terms of direct fabrication of antenna elements on large space based objects that would provide a robust means for multi-functional integration of electromagnetics with space structures.

Primary U.S. Work Locations and Key Partners





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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Jet Propulsion Laboratory (JPL)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
★Jet Propulsion Laboratory(JPL)	Lead Organization	NASA Center	Pasadena, California
MesoScribe Technologies, Inc.	Supporting Organization	Industry	Setauket, New York

Primary U.S. Work Locations	
California	New York

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX14 Thermal Management Systems
  - TX14.2 Thermal Control Components and Systems
    - TX14.2.5 Thermal Control Analysis